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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,159	04/09/2001	Toshiya Uemura	P 280087 T36-133137M/KOH	7726
7590 12/02/2003 MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER LEE, EUGENE	
			ART UNIT 2815	PAPER NUMBER

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,159

Applicant(s)

UEMURA, TOSHIYA

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/365,832.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/3/03 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14 thru 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "wherein said positive electrode is connected by a bonding wire to a same surface of one of said first and second bonding pads as one of said pair of lead frames" is unclear. The bonding wire does not touch the surface of the lead frames.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Insofar as definite, claims 14 thru 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Genriyou 10-151794 JPO in view of Nemoto et al. 6,025,213 in view of Yamada et al. 6,239,490 B1. Genriyou discloses (see, for example, figure [1 (A)]) a semiconductor light-emitting apparatus of a flip chip bonding type comprising a concave/convex lens (transparent base) 101, external electrodes (lead frames) 105, and light emitting chip (light emitting element) 102. In the last paragraph of the applicant's translation, Genriyou states light emitting chips comprising a semiconductor layer formed on insulating substrates such as sapphire. In the same paragraph, Genriyou states the electrode of a positive electrode form on the field side which counters through a semiconductor. The positive and negative electrodes are shown on top of the light emitting chip 102 and each electrode is connected to its respective external electrode 105 by way of conductive wires 103. Genriyou does not disclose first and second bonding pads. However, Nemoto discloses (see, for example, FIG. 15E) a semiconductor light-emitting device package comprising package window portion 32, lead frame 58 and electrode pads (first and second bonding pads) 42. In column 10, lines 66 to column 11, line 4, Nemoto states that the transparent base is bonded to a lead frame through the electrode pads. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the electrode pads (first and second bonding pads) of Nemoto in Genriyou's invention in order to stably mount the concave/convex lens (transparent base) to the external electrodes (lead frames).

Genriyou in view of Nemoto does not disclose an electrode comprising a light non-transmissible material, said electrode being disposed on an opposite side of said light-emitting

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layer from said substrate and reflecting light from said light-emitting layer in a direction through said substrate and said base. However, Yamada discloses (see, for example, FIG. 2) a light emitting device comprising a p-contact 34 that forms the electrode 33. In column 4, lines 45-50, Yamada states the p-contact is formed of palladium, a metal. Metals are light non-transmissible. Therefore any light that is generated in a semiconductor layer will reflect off the palladium layer and go towards the opposite direction. In column 6, lines 45-61, Yamada discloses that an electrode made of palladium reduces the voltage required to drive a given current through a Group III-nitride semiconductor device. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the palladium as the electrode (and therefore reflect light from said light-emitting layer in a direction through said substrate and said base) in order to reduce the voltage required to drive a given current in the light emitting chip.

Regarding claims 17 and 18, see the last paragraph of page 3 of applicant's translation wherein Genriyou states translucency base material contains a fluorescent substance.

Regarding claims 19 and 20, see Genriyou wherein a lead frame 105 projects longitudinally around the light emitting chip 102.

Regarding claims 21 and 24, see, column 4, lines 49-51 wherein Yamada states the thickness of the palladium electrode layer is at least .1 nm (1 Å).

Regarding claims 22 and 23, see second to last paragraph of applicant's translation wherein Genriyou states a multiplex quantum well structure.

6. Insofar as definite, claims 25 thru 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Genriyou 10-151794 JPO in view of Nemoto et al. 6,025,213 in view of

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Yamada et al. 6,239,490 B1 as applied to claims 14-24 above, and further in view of Hide et al. 5,966,393. Genriyou in view of Nemoto in view of Yamada does not disclose a fluorescent material which is adjacent to said substrate and on an opposite side of said substrate from said light-emitting layer. However, Hide discloses (see, for example, FIG. 6) a light emitting device comprising a semiconductor layer 12, base 14 and photoluminescent polymer film (fluorescent material) 34. In column 8, lines 2-18, Hide teaches that the photoluminescent polymer film produces a greater variety of colors in a semiconductor device. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the photoluminescent polymer film (fluorescent material) in order to generate a greater variety of colors in a light emitting chip.

Regarding claim 30, see Genriyou wherein a lead frame 105 extends longitudinally around the light emitting chip 102.

7. Insofar as definite, claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Genriyou 10-151794 JPO in view of Nemoto et al. 6,025,213 in view of Yamada et al. 6,239,490 B1 as applied to claims 14-24 above, and further in view of Oshio et al. 6,274,890. Genriyou in view of Nemoto in view of Yamada does not disclose a sealing resin formed over said transparent base and said GaN semiconductor light-emitting device. However, Oshio discloses a projection (sealing resin) 9 made of a thermosetting resin. In column 6, lines 1-4, Oshio teaches that the projection is used as a lens. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the projection (sealing resin) of

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Oshio in Genriyou in view of Nemoto in view of Yamada in order to focus the light generated from the light-emitting chip.

Response to Arguments

8. Applicant's arguments with respect to claims 14-38 have been considered but are moot in view of the new ground(s) of rejection.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
November 25, 2003


GEORGE ECKERT
PRIMARY EXAMINER